



# **Site-Specific Asbestos Remediation Plan**

**(Revision #4)**

***Amtrak Improvement Project – Contract EX35600-1033***

***Mobility First Intercity Station Projects***

**CONTRACT #1033**

**Amtrak ARRA Program**

**At**

**Libby, Montana**

*Prepared for:*

**Jacobs Engineering Group**

May 30, 2011

Submitted and prepared by:

**Doyon Project Services, LLC  
33810 Weyerhaeuser Way S. Suite 100  
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**Acknowledgement and Notice to Proceed with Remediation Plan**

The following plan has been reviewed with the U.S. EPA on May 17, 2011 at the local Libby, MT office with Mike Cirian and Rebecca Thomas in attendance. The plan meets the EPA's guidelines for handling and disposal of the hazardous material and work to remediate the site is ready to proceed as outlined in this document.

Per section 3.6 of the Contract, this will serve as the formal notice and mutual agreement to have the Design/Builder, Doyon Project Services, LLC, proceed with the work as outlined in this Site Specific Asbestos Remediation Plan (Rev. #2) dated May 17, 2011.

**The following parties below have reviewed and concur with the plan and agree to have Doyon Project Services, LLC proceed with the plan below.**

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**JACOBS ENGINEERING**  
**Print Name/Title:**

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**Date**

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**AMTRAK**  
**Print Name/Title:**

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**Date**

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**BNSF**  
**Print Name/Title:**

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**Date**

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**DOYON PROJECT SERVICES, LLC.**  
**Print Name/Title:**

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**Date**

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## **1.0 BACKGROUND / PROJECT INFORMATION**

### **1.a PROJECT DESCRIPTION**

This site specific asbestos remediation plan was developed by Doyon Project Services for the above reference project. It identifies the control procedures and work practices to keep the on-site employees, public, and surrounding areas safe and educated.

The project requires the construction of Site and ADA Improvements. The construction will include the following elements:

#### **1.a.1 Summary of Construction Activities for ADA Improvements:**

- Mobilize materials and equipment to site
- Receive and inspect materials on site and properly organize on site in approved location
- Demolition of asphalt and timber edging
- Demolition of existing light poles
- Site civil and underdrainage work
- Electrical – Power and lighting
- Helical pier install
- Concrete and tactile detectable warning strip placement
- ADA Upgrades & Wheel Chair Lift Enclosure
- Installation of guardrails and handrails
- Signage
- Painting/Striping

### **1.b BACKGROUND**

#### **1.b.1 Asbestos and Vermiculite**

**Asbestos** is made up of long, thin fibers that are strong and heat-resistant. This has led to its use in thousands of products (such as building materials and heat-resistant fabrics). The fibers do not dissolve or breakdown in any way. They can remain airborne for quite some time, but eventually settle into soil, sediment, or other materials (e.g. carpet).

Please visit [EPA's Asbestos website](#) for more information.

**Amphibole asbestos** describes the mineral family that includes Libby asbestos. Amphibole asbestos fibers are generally straighter and break apart more easily than other asbestos fibers. They are also believed to be more toxic than fibers from other types of asbestos.

Libby amphibole asbestos (LA) is a distinct and relatively uncommon form of asbestos.

- It is not a commercially viable mineral, but a contaminant in the vermiculite ore from the Libby mine.
- Individual fibers are too small to be seen without a microscope.
- Asbestos ore is occasionally seen locally, usually as decorative landscape rock or driveway material.
- The ore is waxy-silky white to greenish white, with fibrous strands running across the surface.

### **Vermiculite and Zonolite**

- Vermiculite is a silver-gold to gray-brown mineral that is flat and shiny in its natural state and puffed and dull in its expanded shape.
- It was discovered near Libby in 1881. In 1919, Dr. Edward Alley found that vermiculite expanded (or "popped") when heated. This created pockets of air that made the material suitable for use as insulation or as a soil amendment.
- Dr. Alley founded the Zonolite Company and developed the mine and processing facility north of Libby, producing expanded vermiculite as Zonolite. Zonolite was lightweight, sturdy, and inexpensive. It was used in everything from construction to school craft projects.

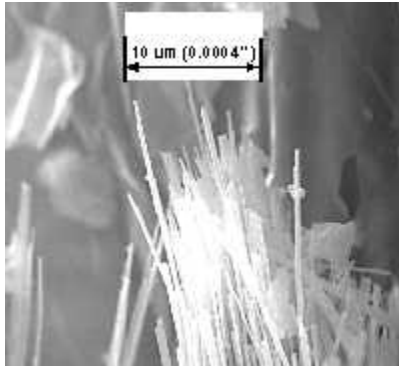
It is estimated that the Libby mine was the source of over 70 percent of all vermiculite sold in the U.S. from 1923 to 1990; and, over its lifetime, it employed more than 1,900 people. W. R. Grace bought the mine and processing facility in 1963 and operated it until 1990.

The vermiculite from the Libby mine was contaminated with a toxic and highly friable form of asbestos called Tremolite-Actinolite Series Asbestos, often called Libby amphibole asbestos (LA).

The asbestos veins in the ore body have contaminated most, if not all, of the material taken from the mine. Milling removed much of the asbestos from the finished product,

but a significant amount remained. Because asbestos fibers are so small, this contamination is not evident with the naked eye.

Not all vermiculite is contaminated. However, it is difficult to distinguish Libby vermiculite with the naked eye, and all vermiculite should be handled with care.



Microscopic asbestos fibers



"Popped" vermiculite



Tremolite rock

### 1.c ROUTES OF EXPOSURE

- Inhalation – primary route of exposure
  - Asbestosis – nonmalignant scarring of the lungs
  - Bronchiogenic Carcinoma – localized malignancy of the lung lining
  - Mesothelioma – diffuse malignancy of the lining of the chest (pleural cavity)
- Eye irritation

- Eating and smoking in work vicinity dramatically increase the inhalation exposure rates

## **1.d ACTION TO DATE**

### **1.d.1 MATERIAL TESTING**

#### **a. CAMP DRESSER & MCKEE (CDM)**

- i. Conducted composite sampling (4/13/11) and tested sample for asbestos contamination. CDM visually verified the presence of vermiculite on-site at the platform area. Test data available upon request.

#### **b. EMSL ANALYTICAL**

- i. Performed analytical test for asbestos concentrations of composite material testing using the same area for material test samples that CDM used.

### **1.d.2 MEETINGS**

- c. 4/19/11 – 10:30am MST - Met with local U.S. Environmental Protection Agency (EPA) and discuss asbestos issues at Camp Dresser & McKee consulting firm / asbestos expert for testing procedures, soil sample collection, and basic safety precaution briefing. Meeting minutes available upon request.
- d. 5/17/11 – 11:00amMST – Met with local U.S. EPA and Rebecca Thomas Regional EPA office, CDM, PRI representatives to review the proposed BNSF plan to remove excavated material and to cover and cap the rest of the work area and implement Institutional Controls with a Proprietary Deed on the property.

## **2.0 SUMMARY:**

**The project area does contain Vermiculite in the soil which was confirmed from the site investigation with CDM. Mike Cirian with the local US EPA office confirms that Best management practices would treat the vermiculite as contaminated material and should be handled as such.**

**The property owner, BNSF, has selected the following remediation method to handle the contaminated material in the work area:**

1. Visual and analytical testing will be performed prior to the beginning of excavation and documented on a site plan as to where the samples were taken and attached as part of the closeout documentation.
2. Remove and dispose of soil associated with trenching (under drain and electrical), helical piers, and removing a 6" lift of the contaminated soil to achieve the 12" cover which would generate approximately 268 BCY of excavation plus the 6" of clean fill to bring the site backup to grade. Remove an additional 6" of material below the utilities to create a buffer for future maintenance.  
  
Pressure wash timber ties on-site in the approved method agreed upon by EPA and DPS. Ties can be transported using similar transportation methods as identified in this remediation plan and disposed of at the Lincoln County Refuse Station (LCR) (per authorizations of Ray Miller, LCR Director).
3. At the bottom of excavation, soil samples will be collected prior to backfill and sent to a lab for results. The sample locations will be shown on a site plan to indicate where samples were taken as well as the extent of the excavation and excavation depths. These samples will then be reviewed by the third party environmental consultant and inserted into the closeout documentation.
4. The "footprint" of the excavation where impacted soils remain will need to be surveyed by a surveyor licensed in the State of Montana in such a manner that the survey may be used to implement an Institutional Control (IC).

**In addition the following activities associated with the Construction of ADA Improvements may be ASBESTOS DRIVEN:**

- Demolition of asphalt and timber edging
- Demolition of existing light poles
- Site civil and underdrainage work
- Electrical trenching
- Helical pier install



\*\*\*If asbestos is found to be present on-site and above acceptable concentration, all personnel working in the on the project will be required to wear the proper PPE as described in this work plan and material will need to be disposed of properly.

### **3.0 NEXT STEPS/ACTION PLAN:**

#### **3.a WRITTEN DIRECTION AND AUTHORIZATION**

- Jacobs to provide Doyon with written authorization and direction to proceed.

#### **3.b ENVIRONMENTAL CONSULTANT**

- Third party environmental consultant will be contracted to provide the following services:

##### **Task 1: Prepare an Excavation Project Work Plan**

Prepare a project work plan that documents the appropriate guidance and procedures for excavating the earthen soil materials, visually observing the excavated soils for the presence of vermiculite, proper disposal and handling of the excavated materials, sources of clean backfill (if needed), and the real time monitoring and documenting of the perimeter ambient air and personal air samples to ensure health and safety.

##### **Task 2: Excavation Oversight & Health and Safety Monitoring**

Provide one experienced site surveillance staff person to conduct oversight of the excavation activities and identify the presence of vermiculite in the excavated materials. The site surveillance staff will complete perimeter ambient air monitoring and assist site excavation crew with the personal air monitoring needed for health and safety of the workers. Soil samples from the site will be collected and sent to a lab for results and sample location will be documented on a plan to show where samples were taken. The Site Surveillance staff will be available for up to 15 10-hour work days.

##### **Task 3: Reporting**

Complete a site surveillance oversight report to document all field activities and sampling results.

**3.c TRAINING**

- Doyon to train all employees, supervisors, and subcontractors working on site to be Hazwoper 40 or 24 certified and receive the required hands on training based on job activity and potential exposure level.

**3.d CONTAINING AREA**

- Orange fencing and red warning tape will encompass the entire work area to denote the exclusion zone areas where the removal activity will occur and where PPE is required.
- Appropriate OSHA signage must be posted at all entrances and other access points to the exclusion zone.

**3.e PERSONAL PROTECTIVE EQUIPMENT (PPE)****3.e.1 Respirators**

- Doyon employees and subcontractors to:
- Be medically cleared to wear respirators
- Fit tested and trained to use respirators
- Issued respirator with appropriate cartridges

**3.e.2 Protective Clothing**

- Hooded disposable Tyvek suits and booties will be worn at all times in the work area.
- At the end of the shift or when they leave the contaminated work area, the suits will be double bagged and deposited into a secure container.
- Disposal of the suits and booties will need to be sent to the mine via truck.

**3.f WATERING DOWN SITE**

- Water Truck will be used to wet down area of work while work is being performed.
- Fire hose will be used to mist and wet areas that the water truck is not able to reach.

### **3.g AIR MONITORING**

- Perimeter air monitoring stations will be setup with data recorded.
- Personal air monitoring will be used by workers for the health and safety of the workers.
- All data will be recorded and documented.

### **3.h TRANSPORTING CONTAMINATED SOILS**

#### **3.h.1 Material will be transported via local trucking company that is certified to transport contaminated material to the Former Vermiculite Mountain Mine**

- Transport contaminated soil without increasing the public's exposure to asbestos
- Waste manifests will be generated with each load prior to leaving site.
- Decon wash for all of trucks transporting contaminated material and ultimately all equipment will be required at mine site to decrease contamination outside of the mine site
- Costs for water and labor used to clean trucks in Decon efforts are to be incurred by the local EPA agency

### **3.i Removal Process and Preparing Materials for Transport**

- During excavations and loading of the trucks, work areas shall be clearly designated as hazardous with orange safety fence as asbestos caution tape attached to temporary fence panels
- Employees within the designated work areas are to wear protective equipment such as Tyvek (or similar) suits / coveralls, booties for shoes, and respirators. PPE use shall be designated by Environmental consultant. Upon leaving the work zones, employees shall dispose of their Tyvek (or similar) suits and booties, and clean their respirators.
- Throughout excavations, the non-friable asbestos contaminated spoils shall be thoroughly wetted prior to removal and saturated in truck for final transportation to a permitted facility
- Before the contaminated soil is loaded into the trucks for transport, the truck will be lined with plastic, material will be carefully handled to avoid spilling any onto the exterior of the truck, material will be mixed slowly with water (from water truck) and excavator

until the soil is saturated and no dust is emitted. Worker using hose shall be wearing proper PPE and standing at least 10-15 feet from the truck

- Daily air monitoring shall be performed each working day by a qualified third party. If work is temporarily suspended, air monitoring will not be required during that time. If air sampling results outside the exclusion zone indicate airborne asbestos fiber concentration(s) at or above 0.01 fibers per cubic centimeter, or the background level, whichever is greater, work shall be stopped immediately and methods shall be altered to reduce the airborne asbestos fiber concentration(s) to the aforementioned level. If air monitoring is not being conducted (i.e., during non-work periods) no one except certified asbestos personnel will be allowed in the designated work areas
- All truck and trailer combinations shall have the capability to be sealed while transporting hazardous materials
- All equipment in contact with the material will be decontaminated onsite under the supervision of the Environmental consultant.

### **3.j CLOSEOUT**

- After all material via option 1 or 2 of section 3.b has been removed and or capped:
- All equipment/tools will be decontaminated
- All contaminated material will be removed off site and disposed of properly.
- The environmental consultant will inspect the entire work area and perform a series of final air monitoring tests.
- All waste manifests will be collected and submitted to the project team.
- A final report with all data and sampling results will be completed and submitted to the project team and the EPA.
- A site plan with dimensions will show the limits of the excavation work including depths and the location of the soil samples will be generated and submitted to Jacobs and the EPA.
- A final closeout meeting will be held with the local EPA office to review the project and final closeout paperwork.